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ABSTRACT

Data from observations of 129 elementary, 362 junior, and 525 high school classes were analyzed to raise questions about classroom environment and classroom practices. Results gathered from four instruments are discussed: (1) physical environment inventory, which recorded classroom architectural arrangement, seating and grouping patterns, furnishings, and materials and equipment; (2) daily summary, which provided an overview of the space and materials available as well as the decision making processes in evidence by students and teacher; (3) five-minute interaction, which was continuous accounting of how time is spent in the classroom and focused on the teacher and student teacher interactions; and (4) classroom snapshots, which provided information about what each adult and student is doing in the classroom, the size of student groups, and the nature of activities in progress. Data gathered from these instruments are analyzed with both "narrow" and "broad" perspectives. The narrow perspective concludes that further research is necessary concerning teaching practices in the context in which they occur. The broader view concludes that the data collected represents an educational scenario that fits the wishes of neither education providers nor recipients. Concluding remarks are made about the processes and necessity of educational change. Tabular presentations are made of some of the data analyzed for this study. (CMJ)

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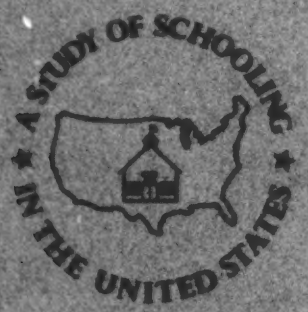
A STUDY OF SCHOOLING

Technical Report Series



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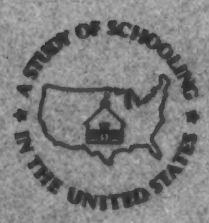

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WHAT YOU SEE IS WHAT YOU GET: A SUMMARY OF OBSERVATIONS IN OVER 1000 ELEMENTARY & SECONDARY CLASSROOMS

Kenneth A. Sirotnik

Technical Report No. 29

1981

A Study of Schooling is based upon the assumption that improving schools requires knowing what is happening in and around them. A comprehensive data-base of contextual information was obtained from students, teachers, administrators, parents and observers at all grade levels in thirty-eight elementary and secondary purposively sampled schools. *It is strongly recommended that readers of any technical report in this series first read Technical Report No. 1 which outlines the details, scope and limitations of the Study as a whole.*

It must be understood that this series of technical reports does not constitute the Study. Some reports are highly specific "molecular" inquiries while others take a more "molar" view across data sources, schooling levels, etc. Some reports are more methodological in nature arising out of issues in data analysis. Many of the reports quite naturally overlap in data analysed and interpretations rendered. Some authors have approached their task as consisting mostly of data description with little discussion beyond the presentation of the data. Others have ventured further into the realm of interpretation and speculation. *It must be further understood that data-based inferences can and do differ among researchers who come at the data from differing points-of-view.* Authors, therefore, are duly acknowledged for each report and are responsible for the material presented therein.

WHAT YOU SEE IS WHAT YOU GET: A SUMMARY OF OBSERVATIONS IN OVER 1000 ELEMENTARY & SECONDARY CLASSROOMS

INTRODUCTION

At various times throughout A Study of Schooling,[1] I and others convincingly (we thought) argued that the least interesting analyses would be those which aggregated data across classes and schools. Of more interest would be those which explored interrelationships between teacher, student and observation data using the classroom as the unit of analysis while accounting for differences between schools. In part, I think our arguments were well taken; see, for example, the kinds of analyses in Oakes (1981) and Sirotnik (1981a).

On the other hand, the paucity of variation in many variables both within and across schools was quite unexpected. Much of the observational data collected are of this nature. For example, in the elementary classes we observed, we estimate that, on the average, just under 3% of the instructional time that the teacher spends interacting with students involves corrective feedback (with or without guidance). At the secondary level, this estimate is less than 2%. And the dispersion of class estimates around these means is minimal, ranging from 0% to 8% and 14% at the elementary and secondary levels, respectively.

No matter how you view it, one of the most touted pedagogical features of classroom instruction--immediate knowledge of results--is hardly occurring in our sample of classrooms during the three full observations recorded. One purpose of this report is to highlight those classroom processes which are rarely observed. The contrast of these processes with those occurring at relatively higher rates will serve to highlight some alarming discrepancies between what many researchers and practioners view as desirable processes presumed (and shown) to correlate positively with student achievement.

My second purpose, then, is to raise some serious questions regarding the ways in which we go about educating students--questions which are not whimsical and which arise out of a substantial body of empirical data. This report is therefore organized into two distinct "halves." First, a straightforward presentation of the data is given with careful attention to sampling, procedures, operational definitions and results. The tables may appear overwhelming at first glance, but please persevere; for they represent a minimal selection of the observational results necessary to convey the required empirical perspective. It is the cumulative effect of these data which adequately frames the portrait of the typical classrooms observed in this study.

The second "half" of this report is a discussion of and commentary on the emergent observational portraits. Both narrower and broader views of the data are offered. The former refers to implications for student achievement and the latter refers to those for student learning in all relevant goal areas of schooling. My hope is that what is presented here is sufficiently provocative so as to stimulate useful further inquiry--by researchers and practitioners alike--into those phenomena we call teaching and learning.

SAMPLE, PROCEDURES AND OBSERVATION SYSTEM

Included in the data base accumulated during A Study of Schooling are observational data on 129 elementary and 887 secondary (362 junior high and 525 senior high) classes. Classes were randomly sampled at each grade level at each elementary school; at secondary schools, classes were randomly sampled to represent each of eight major subject areas. The thirty-eight schools (13 elementary, 12 junior high or middle, and 13 senior high) represent a purposive sample of schools across the nation, with considerable

variation in such factors as school size, economic status of the community, race/ethnicity of student body, and geographic location and characteristics. More specifically, schools were sampled in triples in each community: A senior high school and "feeder" elementary and junior high schools. (One "triple" was a "double" since the senior and junior highs operated as one integral secondary school which we classified as a high school.) High schools ranged in enrollment from 61 to 3006 pupils; estimated median family incomes of the communities served by the schools ranged from $7,100 to $25,000; racial/ethnic compositions of the student bodies included all white, all black, all Mexican-American, 50% white and 50% black, 50% white and 50% Mexican-American, and multi-ethnic combinations; schools were sampled in all major regions of the United States except the northeast; communities ranged the typology spectrum from urban to suburban to rural. In short, although the data base is not suitable for strict statistical generalization to all of schooling in the country, it is sufficiently representative to serve as a rich source for exploratory data analysis and heuristic speculation.

Each class was usually observed by one assigned observer on three different occasions (full days at the elementary level and full periods at the secondary level) during a two-week period in the field. These data were accumulated over occasions into a single observational protocol for each classroom. Aggregating the observational results in this way for each class serves to increase the validity of the data by way of increasing generalizability of the observations over time. Inter-observer reliability of the data was assessed for a subsample of the classes and found to be generally adequate (Sirotnik, 1981b).

The nature of the observational system is quite complex and is thoroughly described elsewhere (Giesen and Sirotnik, 1979). It is hoped that the data

can be presented in a sufficiently descriptive way so as not to necessitate a more elaborate discussion of the instrument here. Briefly, the observation system is a modified version of that developed at the Stanford Research Institute by Jane Stallings and her associates for the evaluation of Project Follow Through (Stallings and Kaskowitz, 1974). Modifications for A Study of Schooling occurred in mainly three ways: (1) It was generalized for use at both elementary and secondary schooling levels, (2) variables were separated out by course content and (3) variables were separated out by classroom contexts: instruction, behavior control, routine and the remainder (which was labeled "social").

The data presented in this report come from the four major sections of the instrument--physical environment inventory (PEI), daily summary (DS), classroom snapshot (CS), and five-minute interaction (FMI)--with particular emphasis on the latter two sections. The PEI is designed to record the architectural arrangement of the classroom, seating and grouping patterns, furnishings, and materials and equipment. The DS provides an overview of the space and materials available as well as the decision-making processes in evidence by students and teacher.

The CS and FMI sections are considerably more complicated. The classroom snapshot provides information about what each adult (usually a teacher) and student in the classroom is doing, the size of student groups (if any) and the nature of the activities in progress. These data can be transformed into the likelihood of finding students, at any given time, involved in designated activities, with or without the teacher, in one or more grouping configurations.

The five-minute interaction portion of the observation record is a more continuous accounting of how time is spent in the classroom, focusing upon

the teacher and the interactive process between teacher and students. These data yield estimates of the percentage of class time various teacher-student interaction configurations occur, i.e., who (e.g., teacher or student) is doing what (e.g., questioning, lecturing, correcting, responding, etc.) to whom (e.g., teacher or student) and how (e.g., verbally, non-verbally, with positive affect, with guidance, etc.) and in what context (instruction, behavior control, routines or social). More description of the observational system will be provided below as needed.

RESULTS

A considerable number of tables are required to present even the minimal amount of data necessary to form an adequate frame of reference against which to interpret the relative presence or absence of various classroom processes. In this section I will, as briefly as possible, highlight the trends in these tables, reserving comments for the following section.

Physical Environment & Daily Summary Data

Table 1 presents the most reliable and usable data to be obtained from

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INSERT TABLE 1 ABOUT HERE

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these sections of the observation instrument. From the PEI data, it was found that approximately 95% of the classrooms observed were of the typical variety--self contained with a capacity for 30-35 students. Eighty percent or more of the secondary classes had no adjacent, usable space; over 70% of the elementary classrooms could be similarly described. Seating arrangements were typically a combination of fixed and moveable chairs. Eighty percent of the junior high classes and nearly 90% of the senior high classes had no learning centers; 60% of the elementary classes were observed to have no learning centers.

Two-thirds of the elementary classes appeared to have some alteration to their physical environment, e.g., some plants, area rugs, unusual bulletin board displays, etc. At the secondary level, over half the junior high and two-thirds of the senior high classes had little or no such elaboration of the basic four-wall classroom environment.

The only reliable variables to be extracted from the Daily Summary are those relating to locus of decision-making, i.e., primarily teacher or student. Seven areas involving decision-making were observed: seating, grouping, content, materials, space, time and learning activities. Each class was given a score equal to the percentage of these areas in which decisions were predominantly teacher-made. Nearly 100% of the elementary classes were entirely teacher-dominated. The junior and senior high classes averaged nearly 90% and 80%, respectively. In effect, the "most" student decision-making occurred at the senior high level, but in only one or two out of the seven possible areas.

Five-Minute Interaction Data

Table 2 presents these data for the major variables defined out of

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INSERT TABLE 2 ABOUT HERE

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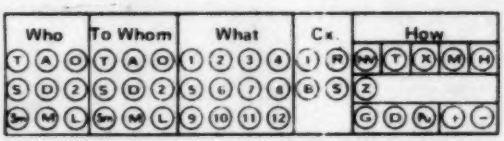
thousands possible when coding who is doing what to whom and how and in what context. These five facets occur in each FMI optically scannable "frame" in the observation booklet as follows:

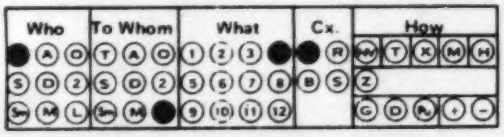


Observers "bubbled-in" 60 such frames, on the average, over a five-minute period of time. Four equally-spaced FMI's were completed each period

observed at the secondary level, and 16 equally-spaced FMI's were completed each day observed at the elementary level. Given three full observations for most classes, this amounts to 60 minutes and 240 minutes of sampled time for most secondary and elementary classes, respectively.

Alternatively, the number of FMI frames coded by observers in these samples of class time are 720 and 2880 for secondary and elementary classes, respectively. The FMI variables for each class are simply the percentage of these frames corresponding to the variable definitions. (Due to round off and truncation errors, these results can be considered accurate to the nearest percent.)

For example, instruction/explanation is "what" code number 4; thus, a teacher explaining something to the total class in an instructional context would be encoded as follows:



"Correction" is a number 9 "what" code; thus, a teacher disciplining a single student would be represented in the code sequence TS9B. "How" codes are used to describe the nature of the teacher-student(s) interactions. A teacher providing corrective feedback with guidance to a small group of students during instruction would be coded TSm9IG. A student making a humorous comment to the teacher in a non-instructional context with noticeably positive classroom affect would be coded ST6SH+. All the data in Table 2 are defined and collected in this fashion.

Looking at the results labeled "context totals" we see that approximately 75% of class time is instructional while most of the remainder is spent on routines (i.e., preparation for instruction, roll taking, cleanup,

etc.). For example, the typical senior high class period averaged 57 minutes in length. Therefore, a rough estimate of the time spent on instruction in the typical senior high class is 43 minutes. Twelve minutes are spent on routines and the remaining time is spent on discipline and control and miscellaneous social interactions.

Nearly 70% of the time--teacher-to-students (or vice versa)--involves verbal interaction (or "talk"), mostly in the instructional context. Of more interest, is the ratio of teacher to student talk. Approximately half of the time is devoted to teacher talk, mostly to either single students or the total class. Less than a fifth of the time involves student talk. Relatively speaking, teachers "out-talk" students by a ratio of about three to one.

If 70% of the time is observed to involve teacher-student verbal interaction, how is the remaining "non-verbal" class time spent? Since our observation system was designed to focus on teachers, we can only account for their remaining time. Most of it (approximately 20%) is nearly equally divided between working alone (usually at their desk) or monitoring/observing the students. (The remaining 10% of the average teacher's time is spread across a number of special codes, e.g., teacher general movement, non-verbal student response to teacher, etc.)

Whether or not the behaviors are verbal, what kinds of classroom processes are initiated by teachers as they interact with one or more students? Consider the relative level of percentages across the dozen or more teacher-to-student "whats". Barely 5% of the instructional time is spent on direct questioning (i.e., questions which anticipate a specific response like "yes", "no", "Columbus", "1492", etc.). Assuming that "imperative commands" made in the instructional context are simply alternative grammatical forms of direct questioning, then this figure increases to about 13% and 10% for

elementary and secondary classes, respectively. On the other hand, not even 1% of the time is devoted to open questions, calling for student skills beyond the first or second levels of the cognitive or affective taxonomies.

As noted in the introduction, corrective feedback is also a rarely observed event, particularly at the secondary level. Providing corrective feedback with guidance, i.e., with additional information designed to help students understand and correct their mistakes, is almost non-existent. In fact, reinforcement of any kind, whether in the form of specific (task related) acknowledgement and praise or in the form of general support and encouragement, is rarely observed. Moreover, less than 5% of teachers' time is spent responding to students which, as will be seen shortly, is less than the percentage of time students are observed initiating interaction with the teacher.

A bit more frequent are the non-verbal behaviors engaged in by teachers when monitoring or observing one or more students. Over 5% of the time is devoted to this activity in elementary classes; this figure increases to just under 10% for senior high classes and just over 10% for junior high classes.

Thus, scanning the array of teacher-to-student "whats", it becomes quite apparent that the modal interaction finds the teacher instructing or explaining, primarily in the instructional context and primarily to the class as a whole. This finding exists for all schooling levels, although a noticeable increase in time spent on instruction/explanation occurs across levels, from nearly 20% in elementary classes to 30% in senior high classes. In senior high classes, over half this time is spent lecturing the total class; in junior high classes, it increases to over three-fifths; and in elementary classes, nearly two-thirds of the teacher's time instructing or explaining

takes place in a total class configuration. At all three levels, teacher-to-small group interactions rarely occur as an instructional modality.

What, then, is the typical configuration when one or more students are observed interacting with the teacher. Scanning the array of student-to-teacher "whats", it is clear that the modal interaction is one of student(s) responding (to the teacher). This occurs roughly 15% and 10% of the time at elementary and secondary levels, respectively. None of the remaining "whats" categories averages over 5% accountable time. Of particular interest are those categories defining student behaviors which are not in response to the teacher but supportive of the classroom process. These categories--combined "directive" and "contributing"--account for less than 10% of the classroom time, ranging from 7% at the junior high level to 9% at the senior high level.

In effect, the modal classroom configurations which we observed (on the average) look like this: the teacher explaining/lecturing to the total class (or a single student), asking direct, factual-type questions or monitoring or observing students; the students "listening" to the teacher or responding to teacher-initiated interaction.

What kind of affect is present while these teacher-student interactions are taking place? Judging from the data, the answer is an unequivocable "None". That is, negligible amounts of noticeably positive or negative affect were recorded by observers--what was observed could only be described as "neutral". Interactions defined as noticeably positive would include comments or behaviors like "I love this subject", "You did a very good job", "Wow", shared laughter, overt enthusiasm, etc. Noticeably negative interactions would include comments and behaviors like "That's a stupid thing to do", "Go sit in the corner", crying, yelling, etc. Apparently, less than 3% of classroom time can be characterized by either of these definitions.

Alternatively, the "affect" present 80% of the time can best be described as neutral.

Readers will note that the general positive, negative and neutral affect figures do not total to one hundred percent. Only teacher-to-student or student-to-teacher interactions were rated on the affect present. The several other types of FMI variables (e.g., teacher monitoring, working alone, talking with another adult, etc.) make up the balance of observed time. Thus, the affective picture of the typical classroom observed in this study is perhaps more appropriately drawn relative to only those instances in which affect could be observed. In this case, neutral affect characterizes the classroom environment over 95% of the time, regardless of the level of schooling.

Snapshot Data

The data derived from this section of the observation system both supports and augments the foregoing results. However, the snapshot data do not provide a continuous accounting of classroom time. Instead, each snapshot "locates" all individuals present in the classroom at a given moment in time. This location is accomplished by the intersection of three facets: (1) The activity in progress (e.g., preparing for instruction, lecturing, discussion, non-task behavior, etc.), (2) the directorship of the activity (teacher or aide working with student(s), students working cooperatively on a common task, or students(s) working independently), and (3) the grouping configuration (one student, small, medium or large groups, or total class).

Thus, using an optically scannable format for each snapshot, observers pinpointed what activities were in progress and how the teacher and students were involved in these activities. As with the FMI's, snapshots were taken 4 times per period at the secondary level and 16 times per day at the elementary for a total of 12 and 48 snapshots, respectively, for each secondary and

elementary classroom. Most of the percentages presented in the following tables are derived by weighting each of the activity-director-group configurations by the number of students involved. These numbers are aggregated across all snapshots for each class. When divided by the total number of students present in all snapshots for each class, the resultant figures represent the likelihood of students being found in each configuration. As such, these values are not interpretable in as straightforward a fashion as the FMI percentages. They can be most useful, however, for relative comparisons.

Tables 3-5 present these figures (in percentage terms) averaged over the classes in each of the three levels of schooling. (Due to rounding and truncation, these figures should be considered accurate to the nearest percentage point.) In order to gain adequate perspective on the results, the three possible 2-way tabulations are presented: the activity-by-group matrix (Table 3), the activity-by-director matrix (Table 4), and the director-by-group matrix (Table 5). Again the magnitudes of the actual percentages

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INSERT TABLES 3-5 ABOUT HERE

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themselves are less interesting than the contrasts they suggest between the modal classroom configurations and those involving relatively few students.

Considering just the marginal results for the activity facet (see activity totals in either Tables 3 or 4), it is clear that the two activities involving the most students alternate between working on written assignments or being lectured, depending on the schooling level. The mean percentages of students involved in the explain/lecture activity steadily increases from just under 20% at the elementary level to just over 25% at the senior high level. Working on written assignments shows the opposite pattern, steadily decreasing from nearly 30% at the elementary level down to 15% at the senior

high level. Relatively larger numbers of students are also involved in routine activities either preparatory to, or following after instruction. In fact, if activity 1 is combined with the remaining non-instructional activities (12 and 13), the student likelihood percentage is over 15% in elementary classes and ranges upward to over 20% at the senior high level. The only other activity with noticeably higher percentages (roughly 15%) is that defining the psychomotor form of practicing skills learned at the secondary level only. However, this is almost all represented by the kinds of skills being acquired in the arts, vocational education and physical education classes in the sample.

Although the intent was to present the observational data with as few complications as possible, it is difficult to ignore the differences between subject matters, particularly as they relate to learning activities. A subsequent section, therefore, will highlight the more important of these relationships. Nonetheless, the primary contrast of interest is evident whether or not subject matter is controlled. That is, whether appropriate practice is psychomotor activity in PE classes or, its analogue, working on written assignments in English classes, it is evident from the data that most students can be found in the more "traditional" and "passive" learning activities. Alternatively, fewer than 8% of the students are found in activities such as discussion, simulation, role playing, and demonstration. These are activities which are ordinarily viewed as less traditional, more enriching, and more demanding since students actively participate in their own learning process.

This finding is echoed in the marginal results for grouping and directorship patterns. Over 50% of the students regardless of level, are found being directed by the teacher. Over a third are found working independently (usually on the same assignment). Only 10% or less are ever found working

together (cooperative) on an assignment. The majority of students at all schooling levels--nearly two-thirds in elementary and three-fourths in secondary classes--work as a total class. Less than 5% are found working individually and less than 10% are found working in small group configurations. The remaining students (nearly 30% and 15% in elementary and secondary classes, respectively) are found in medium to large groups. However, this latter result may be more a function of the observation system itself. For example, if even only one student (or one small group of students) are involved in a different activity (or under a different directorship) from the rest of the class, then the rest of the class, by definition, constitutes a medium or large group (depending upon the class size).

Looking at these results taking two facets into account is even more illuminating. In Table 3 it is apparent that the major activity categories occur mostly in the total class configuration. It is equally apparent from Table 4 that almost all explanation and routine preparation takes place with the teacher as director while almost all activity geared toward skill retention (e.g., practice and written assignments) takes place while students work independently. Table 5 completes the circle, i.e., the likelihood is nearly 50% for finding students under the directorship of the teacher in a total class configuration. Otherwise, they will probably be working independently in large groups or as a total class.

At this point, the reader can probably guess what is disclosed by the activity-by-director-by-group array of percentages.[2] For secondary classes, the modal 3-facet configuration is clearly teacher explaining (lecturing) to the total class (over 20%). Students working independently on written assignments in larger groups or as a total class is the second most typical configuration (about 15%). Ranking third (about 10%) is the configuration which

finds the teacher and total class involved in general routines (cleanup, preparation, etc.). Although approximately 50% is scattered across the remaining 3-facet combinations, no one of these accounts for more than 2% and most account for less than 1% of the available student body.

Finally, five other variables of interest are derived from the snapshot section which are not interpretable in terms of weighted student proportions. First, the above data account for teachers only insofar as they are found interacting with students. The first three variables in Table 6 cover the remaining possibilities and are computed as percentages of all possible activities, not weighted by the number of students involved. Thus, in roughly 10% of all activities, the teacher was observed monitoring students; and in about 8%, the teacher was observed in routine duties. All together, in nearly 20% of the activities observed, the teacher was not interacting with students. This finding jibes quite well with the corresponding FMI data, especially considering the different nature of the snapshot data.

The instructional variety variables are derived as follows: For each class, the number of different instructional activities (activities 2 through 11) seen in progress is accumulated for each observation and then averaged over all three observations. The variety of grouping variable is computed in analogous fashion. On the average, only two different activities and grouping configurations are ever seen during any observation of secondary classes. Based upon the foregoing snapshot description, its a good bet that the students are either listening to the teacher or working on assignments in large groups or as a total class. At the elementary level more instructional variety is in evidence; but then observers had a whole day in which to record the appearance of different activities and grouping patterns.

Subject Matter Differences

As noted above, the presentation of aggregated findings can obliterate important relationships with other factors, especially for those observation data showing at least a modicum amount of variability. Subject matter is one of the more important of these other factors. Separating the observational results by subject matter for the more frequently occuring variables can serve both to clarify the above presentation of aggregated findings and to reinforce the general trends which emerged from the analyses.

This exercise will be pursued using the secondary classes only. In elementary classes, the observation task was structured so as to maximize FMI and snapshot data during the time academic subject matter was being taught. Physical education, therefore, was under-represented. Yet, the results obtained show great disparity in the amounts of observational data obtained in the remaining subjects. This, in fact, is probably one of the more interesting findings regarding subject matter for the elementary classes. Table 7 arrays the relative amounts of data obtained in each of five subject areas

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INSERT TABLE 7 ABOUT HERE

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during the five-minute interaction portion of the observational task. Clearly, the overwhelming emphasis is placed on the teaching of English, reading and the language arts. Only secondarily is emphasis placed upon mathematics. Together, the remaining basic subject areas--science, social studies and the arts--barely occupy 20% of the observed classroom time. These disproportions are even more exaggerated in the earlier grades of elementary schooling.

Tables 8 and 9 array the secondary data by subject area for those

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INSERT TABLES 8 AND 9 ABOUT HERE

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observation variables with sufficient variance for the analysis. Considering first the FMI results in Table 8, it is clear that differences between subject areas do, indeed, exist; but they do not generally mitigate against the previous interpretations of overall FMI results. The most outstanding exceptions are not at all unexpected, e.g., the increased amount of time spent by physical education teachers monitoring or observing students (upwards of 30%) and time spent by students speaking and responding in foreign language classes.

As expected, the effects of differing subject areas are manifested more in the type of activities observed. For this reason, the snapshot data in Table 9 contain the results for all activities including those involving relatively few students. Once again, the exceptions to the overall trend are predictable. For example, all the psychomotor practicing occurs in the "hands on" subjects: the arts, the vocational and physical education. Working on written assignments occurs mostly in the "academic" subjects: English, mathematics, social studies, science and foreign language. In effect, these are really analogous learning activities for the corresponding subject areas. Thus, if nothing else, separating the observation results by subject areas highlights the trends already noted, especially for the academic subject areas.

DISCUSSION AND COMMENTARY

Some years ago, Andy Warhol made a series of films portraying life events in the actual time frame they occurred, for example, six and one-half hours of a person sleeping. In the film, The Haircut, we see what seems like hours of interminable sameness--a closeup of a man's face and head with little or no expression and the hands and tools of a barber at work. At one point the man twitches--not a big twitch--but, relative to what has been going on, a noticeable momentary change in countenance. The audience cheers in a nearly

hysterical relief from the accumulated boredom and strain of rationalizing their stay in the theater.

If Warhol were to have made a film of the typical American classroom, the data we have just reviewed might have easily been the script. We would watch the secondary classroom scene unfold, fifty-five minutes during which a hint of affect would be cause for celebration--positive affect would be nice, but even negative would suffice, as a welcome change from the flat affective neutrality pervading the screen. If it were a physical education class, we would break out in applause were the teacher to actually spend time helping a student (or group of students) perfect their baseball swing instead of monitoring whatever physical activities were in progress. If it were a science class, we would cheer wildly were the teacher to actually demonstrate the effects of air pressure and vacuums instead of only explaining them and/or monitoring the total class as students worked independently on their written assignments. Similar senarios and positive audience response could be played out in the other subject areas--small group poetry reading and discussion sessions in an English class; role play simulations of civil liberty suits in a social studies class; etc.

What if we were forced to view the movie from the standpoint of the student? Depending upon the time frame you wished, the film could run 330 minutes for the typical 6-period day, 495 hours for the typical 90-day semester, over 40 continuous 24-hour days for the typical school year. In all, typical secondary students play out their 6-year role involuntarily, subordinately and in a physical setting that usually translates to no more than a four foot square of space per person <u>not</u> taking into account desks, tables, etc. The scenario and time frame for elementary classes and students

is nearly the same, if not more uneventful, considering how little variety is offered in course content beyond the three R's.

These observations are not new. They were made, far more eloquently, almost twenty years ago by Philip Jackson (1965). His commentary on classroom life was based on over 1000 hours of observation in a few elementary classrooms. As it turns out, he was also accurately portraying a few hours of observation on over 1000 elementary and secondary classrooms nearly two decades later.

In the remainder of this paper, I wish to briefly discuss these findings from two perspectives, one narrow and one broad. Given the limitstions of space and purpose of this report, I will not deal comprehensively with either perspective. Much more data from A Study of Schooling and syntheses of other research findings can be brought to bear on these two themes.[3]

The Narrower View

What we have seen portrayed in the observational data might be labeled either "good news" or "bad news" depending upon which brand of research on teaching you happen to prefer. The "good news" is that this monotonous scenario of teacher talk to total class and student work on written assignments is pretty much consistent with the recommended configurations coming out of the current wave of research on effective teaching practices--increase quantity of schooling, specifically, time on task or academically engaged time, and you increase scores on achievement tests.

The roots of this line of research can be traced through the work of Carroll (1963), Wiley (1973), Bloom (1976), and a host of others. (See the reviews by Rosenshine and Furst, 1971, and Rosenshine, 1979.) This research has been (and continues to be) useful in at least two respects: First, it never hurts to reaffirm some fundamental premises implicit in the form of

pedagogy as it has evolved on this planet--didactics and practice. Thus, although not surprising, further evidence is welcomed which reinforces the connection between concerted teacher-learner effort on skills A, B and C and scores on devices designed to test the attainment of skills A, B and C. Second, and more importantly, this research will focus attention on the complexity of mastery learning in the ordinary classroom setting and eventually lead to more definitive studies of viable strategies. (See Stallings, 1980.)

Unfortunately--the "bad news"--time-on-task research may have also diverted attention away from a host of other critical instructional variables such as discussion, demonstration, questioning at higher cognitive levels, praise, reinforcement, student decision-making, and maintaining a positive affective climate. These are practices which we have rarely observed in operation, which are valued teaching strategies by many educators and researchers, and which are correlated positively with achievement outcomes in many empirical studies.

Peterson (1979), in noting the empirical basis for a more comprehensive view of useful instructional practices, notes also the cyclical nature of research on teaching as it alternates between the "soft" (open, indirect, non-traditional, inductive) and the "hard" (closed, direct, traditional, deductive) modalities of teaching. The swinging pendulum of this false dichotomy becomes particularly destructive as it feeds into the popular cry of "Back to the Basics" whenever education is in trouble. Witness the last decade or two and the achievement test score decline. Ironically, whether guided by Philip Jackson's observations years ago (around the start of the decline) or by those suggested in the more recent data presented here, navigating back to the basics should be easy--we never left.

Clearly, it is the quality--not the quantity--of schooling which serves best as an educational and research focus. Used as a higher order concept, quality of schooling includes time on task but time well spent, as suggested by the current research on academically engaged time noted above. Also included, however, is time spent on teaching practices like encouragement, knowledge of results, small group discussions, individualization, and student involvement in their own education--but not idle praise, corrective feedback without guidance, rambling verbal interactions, busy work as a control device, or token student "decision-making". Much research can be useful in this regard, too. An incomplete but illustrative list includes the following work: Anderson (1970), Bossert (1979), Good, Biddle and Brophy (1975), Johnson (1981), Moos & Moos (1978), Morrison (1974), Ripple (1965), Slavin (1977), Soar & Soar (1979), and Walberg (1977).

We have, therefore, a lot of evidence suggesting an array of teaching practices--some observed frequently and some rarely observed at all--which can effectively operate to enhance student learning. But we have very little evidence suggesting how these practices can be combined in concert given the variety of classroom exigencies encountered by the ordinary teacher. Research attending to teaching practices in the context within which they occur is a high priority agenda item if we are to continue the quest for a truly applied science of teaching. (See, for example, Goodlad, 1975; Bronfenbrenner, 1976; Tikunoff, 1979; and Doyle, 1981.)

The Broader View

Having focused on positive correlations with achievement outcomes as the sine qua non for judging effective teaching practices, the foregoing perspective may convey the impression that schooling is unidimensional in purpose; that the raison d'etre of schools is to provide instruction in basic skills

of required subject matters--a solid academic grounding which might be labeled as the "intellectual" function of schooling.

But, like it or not, schools fulfill a host of other functions, depending upon one's point of view, ranging from providing a glorified day-care center for children to a forum for the solution of societal problems (e.g., racial segregation). A thorough discussion of the functions of schooling would require explicit definitions within a historical and philosophical framework. Readers are advised to consult Goodlad (1979) for just such a presentation. It will suffice here to simply use the term "function" generically with appropriate modifiers. For example, advertised goals in curriculum guides, perceptions of what goes on in schools, and proclamations of what ought to go on, could be classified, respectively, as the stated, apparent and ideal functions of schooling.

I wish to focus on the apparent and ideal functions of schooling, not as I see them, but as the people who are involved see them--teachers, parents and students. For this purpose, additional data from A Study of Schooling is useful to summarize. We asked these three relevant data sources (approximately 1300 teachers, 8500 parents and 15,000 students) what they thought to be the single most emphasized function at their school and then which function should be the most emphasized. These survey items had four alternatives consisting of these four categories into which most lists of stated, apparent or ideal functions can be grouped: intellectual development (as defined above); personal development (building self-confidence, creativity, ability to think independently and self-discipline); social development (helping students learn to get along with other students and adults, preparing them for social and civic responsibility, and developing their awareness and appreciation of our own and other cultures); and vocational development (preparing students

for employment, developing skills necessary for getting a job, developing an awareness of career choices and alternatives).

It should be clear from the results in Table 10 that intellectual development is usually the single most emphasized apparent or ideal function.

INSERT TABLE 10 ABOUT HERE

Equally clear, however, are the significant numbers of persons viewing functions other than the intellectual as of primary importance. In fact, by the time students get into high school, two of the three remaining function categories are perceived to be ideally more important than intellectual development. Of particular interest is the shift in primary importance of intellectual development to the other functions (mainly personal and vocational development) as the teacher, parents and students shift from the apparent to ideal perspectives.[4]

The important contrast here is that between the data in Table 10--what significant people see and want--and what might be inferred to be the apparent functions of schooling from the perceptions of trained observers (the data presented in Tables 1-9). This, of course, is a speculative process which the reader can engage in as well as or better than I. And, it is easier when speculations are grounded in empirical studies based upon commonly accepted student outcome criteria. This was the case in the previous discussion, labeled "the narrow view," which pertained to the intellectual function of schooling.

But what are the criteria of student learnings in the personal, social and vocational function domains? And where is the research sorting out the more promising instructional strategies to achieve these outcomes? In answer, I will venture to say that nearly all the research on teaching practices has

focused on what 50% or more of those intimately concerned with schooling (at least those in our sample) do not see as a primary function of schooling.[5]

Most importantly, this same disproportionality in emphasis is manifested in the bulk of data presented in this paper. By way of example, the following questions and reflections are at the basis of this inference:

- Do we want an educated, informed and participating citizenery? If so, how does this square with the time spent on social studies at the elementary school? . . . the time spent in active discussion, simulation, and role play in secondary social studies classes? Are we looking at the roots of the kind of national apathy that sends a leader to the White House with an overwhelming majority vote from an underwhelming minority of the eligible voting public?

- Do we want philosophers in the literal meaning of the word--people who value continuing their education beyond the formal walls of the school, who might even enjoy learning and who can identify their educational needs as they arise? If so, how does this square with the degree of positive affect, encouragement, praise, and guidance students experience in the classroom? What will people do with increasing amounts of free time as technology escalates in exponential proportions?

- Do we want intelligent contributors to, and consumers of, what society has to offer? Are independent and creative thinking valuable assets for solving pressing societal problems? If so, how does this square with the number of opportunities for decision-making offered to students and the extent of innovative teaching practices requiring the active involvement of learners?

The point is this: The record of classroom experience presented here is very much out-of-sync with the wishes of both education providers and recipients. Moreover, these wishes, not coincidentally, are thoroughly ingrained in the formal curriculum documents at state and district levels as well.[6] The final irony, of course, is that as we systematically deemphasize the nonintellectual functions of schooling, we communicate subtle messages to students which can be pretty much decoded as the antitheses of the usual goal statements to be found in these other areas. That is, we implicitly

teach dependence upon authority, linear thinking, social apathy, passive involvement, hands-off learning, et cetera. The so-called "hidden" curricula are disturbingly apparent.

CONCLUDING REMARKS

It would be a grave mistake to interpret what I have reported and commented upon as an indictment of teachers and schools. There do exist exceptional schools and teachers quite atypical of the aggregated profiles presented here. But fundamental and pervasive changes cannot happen without restructuring societal values and priorities. With sufficient endowments, schools can become more viable hosts for teacher-learner activities. Teachers can become more effective when trained properly, treated as professionals, and rewarded appropriately.

However, the purpose of this report has been to raise questions about what goes on in classrooms--not to answer them. At least the questions have been grounded in comprehensive, empirical inquiry. We have seen the modus operandi of the typical classroom--didactics, practice and little else. As such, schools have changed little since we and those before us were there. What have changed, and what continues to change, are the economic, social and political realities of the society in which we live. Schools and the people who care about them must be responsive to these changes. No one has made the case better than Alvin Toffler (1974):

> Education . . . is not just something that happens in the head. It involves our muscles, our senses, our hormonal defenses, our total biochemistry. Nor does it occur solely within the individual. Education springs from the interplay between the individual and a changing environment. The movement to heighten future-consciousness in education, therefore, must be seen as one step toward a deep restructuring of the links between schools, colleges, universities and the communities that surround them. (p. 13)

I suspect "future shock" has been upon us for some time. If we don't unplug ourselves from the mediocrity of our educational circuitry, we will never achieve a working correspondence between what we see in classrooms and what we want for our children.

Footnotes

1. More detailed information on A Study of Schooling can be found in the series of four sequential articles published in the Phi Delta Kappan. The first in this series, Goodlad, Sirotnik and Overman (1979), includes a conceptual overview, the sample design, and the types of data collected.

2. The 3-way activity-by-director-by-group matrix is available from the author upon request.

3. A more in-depth treatment of these and other issues including recommendations for school improvement will be found in Goodlad (forthcoming).

4. See Overman (1980) for more detailed analyses of these data.

5. By no means am I attempting to imply that the research focused upon goal areas in intellectual development has been a waste of time. Personally, I believe the intellectual function to be the single most important function for schooling. But I also believe that instructional strategies can be harmoniously orchestrated in the same time space so as not to deemphasize important goal areas in the other function categories.

6. See Klein (1980) for an analysis of state and district curriculum guides.

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Table 1

Physical Environment Inventory and Daily Summary Classroom Data Aggregated at Elementary (E), Junior High (JH), and Senior High (SH) School Levels

Data Type	Schooling Levels[a] E	JH	SH
Physical Environment Inventory			
Space:			
Classes defined as single room or equivalent (%)	94.6	95.5	94.7
Classes without adjacent usable space (%)	73.2	86.9	79.2
Furniture/Furnishings/Equipment:			
Fixed vs. variable seating ($\bar{X}$ on scale with 1 = fixed, 2 = combination, 3 = variable)	2.2	1.9	1.8
Classes without learning centers (%)	60.6	79.9	91.7
Classes with little or no alteration to physical environment (%)	33.1	58.0	66.0
Daily Summary			
Total locus of decision-making (% teacher dominated)	94.7	88.7	78.7

a. Secondary results based only upon observations in English, mathematics, social studies, science, and foreign language classrooms.

Table 2

FMI Classroom Data Aggregated at Elementary (E), Junior High (JH), and Senior High (SH) School Levels

Variable	Schooling Level	Mean % FMI Frames Corresponding to Variable Definitions: Separate Contexts[a] I	B	R	S	Context Total
Contexts	E	73.2	4.9	19.7	2.2	100.0
	JH	77.3	2.9	18.2	1.6	100.0
	SH	75.8	1.4	20.5	2.3	100.0
Verbal Interaction	E	56.6	3.6	7.2	1.5	68.9
	JH	55.4	2.5	5.5	1.1	64.4
	SH	57.6	2.5	4.6	1.7	66.4
Total Teacher:	E	41.1	3.1	5.4	0.9	50.6
	JH	42.9	2.1	4.1	0.7	49.8
	SH	44.7	0.9	4.4	1.0	51.0
to one student	E	20.8	1.9	2.6	0.7	25.9
	JH	20.3	1.2	1.9	0.5	23.9
	SH	18.9	0.5	2.3	0.7	22.5
to groups(s)	E	4.4	0.4	0.6	0.0	5.3
	JH	3.6	0.2	0.3	0.1	4.2
	SH	5.9	0.1	0.4	0.1	6.6
to total class	E	16.0	0.9	2.3	0.2	19.4
	JH	19.0	0.6	1.9	0.2	21.7
	SH	19.8	0.2	1.8	0.2	22.0
Total Student:	E	15.5	0.5	1.8	0.6	18.3
	JH	12.5	0.4	1.4	0.4	14.6
	SH	12.9	1.6	0.2	0.7	15.4
Teacher Working Alone	E	N/A	(———	9.7	———)	9.7
	JH	N/A	(———	10.3	———)	10.3
	SH	N/A	(———	11.7	———)	11.7
Teacher & Students Working Together	E	2.2	(———	0.1	———)	2.3
	JH	3.1	(———	0.1	———)	3.2
	SH	2.3	(———	0.3	———)	2.5
Teacher Interacting With Another Teacher	E	N/A	(———	0.9	———)	0.9
	JH	N/A	(———	1.0	———)	1.0
	SH	N/A	(———	1.0	———)	1.0
Teacher to Student(s) "Whats"						
Direct Questions	E	6.7	0.1	0.6	0.1	7.5
	JH	5.3	0.1	0.4	0.1	5.9
	SH	5.1	0.0	0.5	0.1	5.7
Open Questions	E	0.6	0.0	0.0	0.0	0.6
	JH	0.5	0.0	0.0	0.0	0.6
	SH	0.5	0.0	0.0	0.0	0.5
Response (To Students)	E	2.2	0.0	0.5	0.1	2.8
	JH	3.3	0.0	0.4	0.1	3.8
	SH	3.4	0.0	0.5	0.1	4.0
Instruction/Explanation:	E	17.5	0.1	1.9	0.1	19.6
	JH	25.6	0.0	1.8	0.1	27.5
	SH	28.3	0.0	2.0	0.1	30.4
to one student	E	4.0	0.0	0.3	0.0	4.4
	JH	7.5	0.0	0.3	0.0	7.9
	SH	7.7	0.0	0.5	0.0	8.2

a. I = instruction; B = behavior; R = routine; S = social

Table 2 (continued)

Variable	Schooling Level	Mean % FMI Frames Corresponding to Variable Definitions: Separate Contexts[a] I	B	R	S	Context Total
Instruction/Explanation (cont'd)						
to group(s)	E	2.2	0.0	0.2	0.0	2.3
	JH	2.7	0.0	0.1	0.0	2.8
	SH	4.6	0.0	0.3	0.0	4.9
to total	E	11.3	0.1	1.4	0.0	12.9
	JH	15.3	0.0	1.3	0.0	16.7
	SH	16.0	0.0	1.3	0.0	17.4
Imperative Command	E	6.4	0.2	1.6	0.1	8.3
	JH	4.5	0.1	0.7	0.0	5.3
	SH	3.7	0.0	0.6	0.0	4.3
Specific Acknowledgment	E	2.7	0.0	0.1	0.0	2.8
	JH	1.8	0.0	0.1	0.0	1.9
	SH	1.6	0.0	0.1	0.0	1.8
Specific Praise	E	0.5	0.0	0.0	0.0	0.6
	JH	0.3	0.0	0.0	0.0	0.4
	SH	0.2	0.0	0.0	0.0	0.3
General Encouragement	E	0.7	0.0	0.1	0.1	0.9
	JH	0.4	0.0	0.0	0.1	0.5
	SH	0.6	0.0	0.1	0.0	0.7
Simple Correction	E	1.9	2.2	0.1	0.0	4.2
	JH	0.9	1.5	0.1	0.0	2.5
	SH	0.7	0.7	0.1	0.0	1.5
Correction With Guidance	E	1.0	0.3	0.0	0.0	1.3
	JH	0.6	0.2	0.0	0.0	0.8
	SH	0.6	0.1	0.0	0.0	0.7
Comments/General Action	E	2.3	0.1	0.9	0.5	3.8
	JH	1.6	0.0	1.4	0.4	3.4
	SH	1.9	0.0	1.5	0.7	4.0
No Response	E	0.0	0.0	0.0	0.0	0.0
	JH	0.1	0.0	0.0	0.0	0.1
	SH	0.0	0.0	0.0	0.0	0.1
Rejection/Refusal	E	0.0	0.0	0.0	0.0	0.1
	JH	0.0	0.0	0.0	0.0	0.0
	SH	0.0	0.0	0.0	0.0	0.0
Monitor/Observe	E	6.5	0.3	0.8	0.1	7.6
	JH	10.4	0.1	0.5	0.0	11.1
	SH	8.8	0.0	0.5	0.1	9.4
Student(s) "Whats" - Teacher Involved						
Combined Directive (Questioning, Explaining, Commending, Correcting)	E	3.3	0.0	0.6	0.1	4.0
	JH	3.9	0.0	0.5	0.1	4.5
	SH	4.0	0.0	0.6	0.1	4.7
Response (To Teacher)	E	12.2	1.0	1.7	0.2	15.0
	JH	8.5	0.5	0.9	0.1	9.9
	SH	7.5	0.3	0.8	0.1	8.7
Not Responding (To Teacher)	E	0.4	0.1	0.0	0.0	0.6
	JH	0.3	0.0	0.0	0.0	0.3
	SH	0.3	0.0	0.0	0.0	0.4
Refusal	E	0.0	0.0	0.0	0.0	0.0
	JH	0.0	0.0	0.0	0.0	0.1
	SH	0.0	0.0	0.0	0.0	0.1

a. I = instruction; B = behavior; R = routine; S = social

Table 2 (continued)

Variable	Schooling Level	Mean % FMI Frames Corresponding to Variable Definitions: Separate Contexts[a] I	B	R	S	Context Total
Combined Contributing (General Comments, Acknowledgment, Support, Encouragement)	E	2.7	0.1	0.3	0.4	3.5
	JH	1.8	0.0	0.3	0.2	2.3
	SH	3.1	0.0	0.6	0.5	4.3
Combined Assertive (Correction and Refusal)	E	0.4	0.0	0.1	0.0	0.5
	JH	0.3	0.0	0.0	0.0	0.3
	SH	0.3	0.0	0.1	0.0	0.4
Questioning	E	2.3	0.0	0.6	0.1	2.9
	JH	3.6	0.0	0.5	0.1	4.1
	SH	3.4	0.0	0.5	0.1	4.1
Response-Nonverbal	E	2.3	0.6	0.8	0.0	3.8
	JH	1.7	0.2	0.2	0.0	2.1
	SH	1.3	0.1	0.3	0.0	1.7
Student Direction of Activity	E	1.1	0.0	0.0	0.0	1.1
	JH	0.6	0.0	0.0	0.0	0.6
	SH	0.5	0.0	0.0	0.0	0.5
Affective Climate						
Touching	E	0.1	0.1	0.0	0.0	0.3
	JH	0.2	0.0	0.0	0.0	0.3
	SH	0.1	0.0	0.0	0.0	0.1
Humor	E	0.1	0.0	0.0	0.0	0.1
	JH	0.2	0.0	0.0	0.1	0.4
	SH	0.3	0.0	0.0	0.1	0.4
Demeaning/Punishing	E	0.0	0.2	0.0	0.0	0.3
	JH	0.0	0.2	0.0	0.0	0.2
	SH	0.0	0.0	0.0	0.0	0.1
General Positive	E	1.0	0.1	0.1	0.1	1.3
	JH	1.0	0.0	0.1	0.2	1.3
	SH	0.9	0.0	0.1	0.2	1.2
General Negative	E	0.1	0.4	0.0	0.3	0.8
	JH	0.1	0.3	0.0	0.3	0.7
	SH	0.1	0.1	0.0	0.4	0.6
General Neutral	E	66.7	4.4	9.4	1.5	82.0
	JH	69.0	2.6	7.1	1.0	79.6
	SH	69.7	1.2	7.8	1.7	80.4

a. I = instruction; B = behavior; R = routine; S = social

Table 3

Snapshot Data: Activity-by-Group Matrix
Aggregated at the Three Schooling Levels

Activity Type	Schooling Level	Mean % Students Involved: Group Type: One Student	Small	Medium/ Large	Total Class	Activity Type Totals
1. Preparation for assignments or instructions; cleanup	E	0.1	0.4	1.5	10.2	12.1
	JH	0.2	0.4	1.0	14.1	15.7
	SH	0.2	0.6	0.7	11.6	13.2
2. Explain, lecture, or read aloud	E	0.2	0.4	2.2	16.1	18.9
	JH	0.4	0.3	0.7	20.8	22.2
	SH	0.3	0.4	1.3	23.8	25.8
3. Demonstration	E	0.0	0.0	0.1	1.0	1.2
	JH	0.0	0.1	0.2	1.1	1.5
	SH	0.1	0.2	0.2	1.3	1.7
4. Discussion	E	0.0	0.1	0.7	6.0	6.8
	JH	0.0	0.1	0.2	4.4	4.6
	SH	0.0	0.2	0.3	4.7	5.2
5. Simulation, role playing	E	0.0	0.0	0.1	0.2	0.3
	JH	0.0	0.0	0.1	0.2	0.2
	SH	0.0	0.1	0.0	0.1	0.2
6. Reading	E	0.4	1.0	3.0	1.4	5.8
	JH	0.3	0.2	0.8	1.6	2.9
	SH	0.2	0.2	0.5	0.9	1.9
7. Work on written assignments	E	0.8	2.4	15.4	10.6	29.1
	JH	0.8	3.0	5.9	11.2	20.9
	SH	0.7	2.3	4.3	7.9	15.2
8. Practice or perform (psycho-motor, physical)	E	0.2	1.2	1.9	3.4	6.7
	JH	0.6	3.2	3.2	7.3	14.4
	SH	1.2	4.4	3.9	6.8	16.3
9. Practice or perform (verbal)	E	0.1	0.5	1.0	3.2	4.9
	JH	0.1	0.4	0.6	3.0	4.0
	SH	0.1	0.6	0.5	3.3	4.5
10. Taking test or quiz	E	0.0	0.0	0.5	2.1	2.6
	JH	0.2	0.0	0.9	4.5	5.6
	SH	0.1	0.2	0.9	4.4	5.6
11. Audio visual equipment	E	0.1	0.4	0.6	5.0	6.0
	JH	0.1	0.3	0.1	3.9	4.3
	Sh	0.1	0.1	0.1	2.7	2.9
12. Student non-task behavior or teacher social interaction with student(s); no assignment	E	0.2	0.6	0.9	3.5	5.2
	JH	0.4	0.5	0.9	1.7	3.5
	SH	0.7	1.6	1.5	3.6	7.4
13. Adult disciplining students	E	0.0	0.0	0.0	0.4	0.5
	JH	0.0	0.0	0.0	0.2	0.2
	SH	0.0	0.0	0.0	0.1	0.1
Group Type Totals	E	2.1	7.0	27.9	63.1	100.1
	JH	3.1	8.4	14.7	73.9	100.1
	SH	3.8	10.9	14.2	71.2	100.1

Table 4

Snapshot Data: Activity-by-Director Matrix
Aggregated at the Three Schooling Levels

Activity Type	Schooling Level	Mean % Students Involved: Director Type — Teacher	Cooperative	Independent	Activity Type Totals
1. Preparation for assignments or instructions; cleanup	E	10.3	0.3	1.4	12.1
	JH	13.8	0.2	1.6	15.7
	SH	11.1	0.2	1.9	13.2
2. Explain, lecture, or read aloud	E	17.5	1.4	N/A	18.9
	JH	21.4	0.8	N/A	22.2
	SH	24.4	1.4	N/A	25.8
3. Demonstration	E	0.9	0.3	N/A	1.2
	JH	1.5	0.0	N/A	1.5
	SH	1.5	0.2	N/A	1.7
4. Discussion	E	6.8	0.0	N/A	6.8
	JH	4.5	0.1	N/A	4.6
	SH	5.0	0.2	N/A	5.2
5. Simulation, role playing	E	0.2	0.1	N/A	0.3
	JH	0.2	0.1	N/A	0.2
	SH	0.2	0.0	N/A	0.2
6. Reading	E	3.0	0.3	2.5	5.8
	JH	0.3	0.2	2.4	2.9
	SH	0.1	0.2	1.6	1.9
7. Work on written assignments	E	3.7	0.6	24.9	29.1
	JH	2.0	1.7	17.2	20.9
	SH	1.7	1.3	12.2	15.2
8. Practice or perform (psycho-motor, physical)	E	2.5	0.8	3.3	6.7
	JH	4.2	3.3	6.9	14.4
	SH	4.3	3.8	8.3	16.3
9. Practice or perform (verbal)	E	4.1	0.4	0.4	4.9
	JH	3.1	0.3	0.6	4.0
	SH	3.2	0.6	0.6	4.5
10. Taking test or quiz	E	1.7	0.0	0.9	2.6
	JH	1.6	0.0	4.0	5.6
	SH	1.2	0.0	4.4	5.6
11. Audio visual equipment	E	N/A	1.6	4.4	6.0
	JH	N/A	1.1	3.2	4.3
	SH	N/A	1.2	1.7	2.9
12. Student non-task behavior or teacher social interaction with student(s); no assignment	E	2.1	0.7	2.5	5.2
	JH	0.7	0.8	2.1	3.5
	SH	1.5	1.7	4.2	7.4
13. Adult disciplining students	E	0.5	N/A	N/A	0.5
	JH	0.2	N/A	N/A	0.2
	SH	0.1	N/A	N/A	0.1
Director Type Totals	E	53.2	6.6	40.3	100.1
	JH	53.5	8.6	37.9	100.0
	SH	54.3	10.9	34.9	100.1

Table 5

Observation Snapshot: Director-By-Group
Matrix Aggregated at the Three Schooling Levels

Director Type	Schooling Level	Mean % Students Involved: Group Type: One Student	Small	Medium/ Large	Total Class	Director Type Totals
Teacher	E	0.6	2.1	8.3	42.2	53.2
	JH	0.9	1.4	3.2	48.1	53.5
	SH	1.1	1.6	2.7	48.9	54.3
Cooperative	E	0.1	2.1	1.1	3.3	6.6
	JH	0.3	4.7	1.0	2.7	8.6
	SH	0.1	5.7	1.5	3.6	10.9
Independent	E	1.4	2.8	18.5	17.6	40.3
	JH	2.0	2.4	10.5	23.0	37.9
	SH	2.7	3.7	10.0	18.6	34.9
Group Type Totals	E	2.1	7.0	27.9	63.1	100.1
	JH	3.1	8.4	14.7	73.9	100.1
	SH	3.8	10.9	14.2	71.2	100.1

Table 6

Snapshot Data: Additional Variables
Aggregated at the Three Schooling Levels

Variable	Schooling Levels E	JH	SH
Relative Frequency (%) of Other Teacher Activities:			
Teacher monitoring and/or observing students	9.3	12.7	9.8
Teacher custodial, routines	6.4	8.1	7.8
Teacher not involved (or out of classroom)	0.3	0.8	0.7
Instructional Variety:			
Activities ($\overline{X}$ on scale of 0-13)	4.8	1.8	1.7
Grouping ($\overline{X}$ on scale of 1 to 4)	3.9	1.8	1.9

Table 7

Percentage of FMI Frames Corresponding to the Five Basic Subject Areas Observed in Elementary Classes

Subject Area	Early[a] Elementary Classes	Upper[b] Elementary Classes	All Elementary Classes
English/Reading/Language Arts	72.1	56.3	64.0
Mathematics	14.6	20.2	17.5
Social Studies	4.4	7.2	4.9
Science	2.4	12.8	8.7
The Arts	6.6	3.5	5.0

a. Grades 1 through 3

b. Grades 4 through 6

Table 8

Summary by Subject of the More Frequently Occurring FMI Variables at the Secondary Levels

Variable	Schooling Level	Subject Area: Eng.	Math	Soc. St.	Sci.	F.L.	Arts	Voc. Ed.	P.E.	Overall Classes
Instruction Context	JH	77.0	78.4	78.0	75.8	84.7	80.2	72.6	77.9	77.3
	SH	73.6	79.3	75.2	77.5	83.1	75.2	74.1	78.2	75.8
Teacher Talk	JH	50.7	54.8	47.0	52.7	50.8	47.2	50.7	41.5	49.8
	SH	49.4	57.9	52.4	55.2	52.7	46.2	49.3	40.9	51.0
Student Talk	JH	17.6	16.5	14.1	15.1	22.3	10.1	12.7	9.3	14.6
	SH	15.6	16.4	14.8	16.7	23.1	14.1	15.0	10.4	15.4
Teacher Working Alone	JH	11.0	9.2	10.4	10.0	5.4	8.4	13.4	6.4	10.3
	SH	14.0	10.4	13.8	10.8	7.5	9.0	14.2	8.1	11.7
Teacher "Whats": Direct Questions	JH	7.4	8.4	5.5	6.3	6.4	3.9	4.1	2.6	5.9
	SH	5.7	7.6	5.2	7.0	8.9	3.4	5.2	2.5	5.7
Instruction/ Explanation	JH	24.1	29.5	25.9	28.5	20.3	28.7	32.8	21.9	27.5
	SH	28.2	36.6	35.4	33.6	22.2	28.5	30.8	19.7	30.4
Monitor/Observing	JH	9.7	8.6	12.6	10.9	12.2	7.0	10.0	30.5	11.1
	SH	11.0	7.0	8.3	7.5	6.7	8.6	10.3	26.7	9.4
Student(s) Reponding	JH	11.9	11.3	9.2	10.1	16.3	8.4	6.9	8.7	9.9
	SH	8.2	9.5	6.9	8.7	16.5	8.3	7.9	9.0	8.7
General Neutral Affect	JH	79.8	82.9	76.3	81.9	89.1	76.4	78.2	86.0	79.6
	SH	78.8	84.9	77.7	82.6	83.6	80.8	78.9	82.1	80.4
Sample Sizes	JH	73	68	53	41	11	44	48	24	362
	SH	83	71	76	65	27	65	105	33	525

Table 9

Summary by Subject of Snapshot
Activities at the Secondary Levels

Activity	Schooling Level	Eng.	Math	Soc. St.	Sci.	F.L.	Arts	Voc. Ed.	P.E.	Mean Overall Classes
1. Preparation for assignments/ instructions/ cleanup	JH	14.8	14.4	16.7	14.7	15.0	18.0	16.4	24.7	15.7
	SH	13.8	11.5	12.6	15.6	8.2	14.2	12.9	15.4	13.2
2. Explain, lecture, or read aloud	JH	22.6	28.1	28.0	23.6	14.9	13.9	19.8	10.2	22.2
	SH	27.2	35.3	36.9	31.7	21.9	12.8	19.0	5.2	25.8
3. Demonstration	JH	0.4	1.9	0.3	0.3	0.0	0.7	3.9	3.8	1.3
	SH	0.7	3.0	0.2	3.2	0.0	2.3	2.1	1.0	1.7
4. Discussion	JH	5.6	3.4	7.8	4.8	4.2	2.2	2.7	0.0	4.6
	SH	9.7	2.2	10.2	4.7	6.0	0.9	3.5	0.8	5.2
5. Simulation/role playing	JH	0.0	0.0	0.1	0.1	0.0	1.1	0.3	0.0	0.2
	SH	0.3	0.0	0.0	0.3	0.1	0.2	0.0	0.0	0.2
6. Reading	JH	8.4	0.0	4.8	1.4	3.4	0.0	1.7	0.0	2.9
	SH	6.1	0.4	3.2	1.0	1.3	0.4	0.8	0.5	1.9
7. Work on written assignments	JH	30.5	35.3	21.7	20.1	8.9	4.5	8.5	0.9	20.9
	SH	18.4	27.2	15.2	13.2	15.2	1.4	17.7	2.6	15.2
8. Practice or perform: psychomotor/physical	JH	1.2	1.5	0.3	15.6	0.6	39.2	35.0	48.6	14.4
	SH	1.8	3.3	1.1	12.3	1.9	43.4	29.6	53.5	16.3
9. Practice or perform: verbal	JH	2.9	0.7	1.0	0.8	31.0	11.8	2.9	4.2	4.0
	SH	1.3	0.8	1.0	1.8	26.7	15.3	2.2	3.7	4.5
10. Taking test or quiz	JH	7.5	8.0	6.4	6.5	13.0	1.8	1.3	0.8	5.6
	SH	9.1	8.5	7.1	8.9	5.9	0.2	3.9	2.4	5.6
11. Audio visual	JH	2.3	1.5	9.0	8.0	6.7	3.0	3.0	0.0	4.3
	SH	4.1	0.0	5.8	1.0	2.7	2.2	1.9	3.5	2.9
12. Student non-task behavior or teacher social interaction (No assignment)	JH	3.2	4.7	3.5	3.0	0.8	3.3	4.0	6.1	3.5
	SH	7.2	7.6	6.2	5.7	9.9	6.3	5.8	11.0	7.4
13. Teacher disciplining students	JH	0.2	0.2	0.0	0.0	1.0	0.1	0.1	0.5	2.2
	SH	0.0	0.0	0.2	0.1	0.0	0.0	0.2	0.0	1.1

Table 10

Teacher, Parent and Student Views of the Single Most Emphasized Apparent and Ideal Functions of Schooling

Level & Data Source	Function							
	Intellectual		Social		Personal		Vocational	
	Apparent	Ideal	Apparent	Ideal	Apparent	Ideal	Apparent	Ideal
Elementary								
Teachers	78.5	48.9	12.2	14.0	6.1	33.5	3.2	3.5
Parents	68.9	57.6	13.6	9.3	11.4	24.5	6.0	8.6
Students	61.4	47.1	11.1	13.8	11.9	17.3	15.5	21.8
Junior High								
Teachers	64.4	46.7	16.3	13.9	8.7	29.3	10.7	10.1
Parents	56.3	51.1	19.5	9.5	11.2	21.1	13.0	18.2
Students	64.1	38.0	11.7	13.4	11.2	18.3	13.1	30.3
Senior High								
Teachers	52.2	45.6	18.0	9.9	6.8	29.7	23.0	14.8
Parents	43.1	46.5	19.0	8.7	10.2	19.3	27.8	25.5
Students	61.6	27.3	10.2	15.9	13.2	25.6	14.9	31.1